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(54)	PLAYBACK DEVICE HAVING TEXT
	DISPLAY AND COMMUNICATION WITH
	REMOTE DATABASE OF TITLES

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(56) References Cited

U.S. PATENT DOCUMENTS

5,113,383		5/1992	Amemiya et al	
5,132,949		7/1992	Choi.	
5,157,614		10/1992	Kashiwazaki et al	
5,157,646		10/1992	Amemiya et al	
5,263,010		11/1993	Amemiya et al	
5,341,350	*	8/1994	Frank et al	369/30
5,392,264		2/1995	Hira .	
5,446,714		8/1995	Yoshino et al	
5,463,605		10/1995	Nishida et al	
5,464,946		11/1995	Lewis .	
5,475,835		12/1995	Hickey .	
5,559,764		9/1996	Chen et al	
5,615,345		3/1997	Wanger.	
5,625,608		4/1997	Grewe et al	
5,642,337	*	6/1997	Oskay et al	369/30
5,679,911		10/1997	Moriyama et al	
5,680,379		10/1997	Ishida et al	

	5,689,484		11/1997	Hirasawa .
	5,691,964	*	11/1997	Niederlein et al 369/30
	5,701,385		12/1997	Katsuyama et al
	5,726,957		3/1998	Hisamatsu et al
	5,740,304		4/1998	Katsuyama et al
	5,751,672		5/1998	Yankowski .
	5,757,739		5/1998	Heath et al
	5,768,222		6/1998	Hisamatsu et al
	5,774,431		6/1998	Bos et al
	5,781,889	*	7/1998	Martin et al 705/1
	5,793,726		8/1998	Nagano .
	5,815,471		9/1998	Mince et al
	5,822,283		10/1998	Bos et al
	5,959,944	*	9/1999	Dockes et al 369/30
	5,959,945	٠	9/1999	Kleiman 369/30
	6,011,758	*	1/2000	Dockes et al 369/30
	6,031,795		2/2000	Wehmeyer.
	6,034,925		3/2000	Wehmeyer.
	FC	Ж	EIGN PA	ATENT DOCUMENTS
	10-171818	*	6/1998	(JP) 369/30
	10-1/1010		0/1770	(31) 303/30

* cited by examiner

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(57) ABSTRACT

A low-cost library management solution for consumer music selection systems. A multiple CD changer includes non-volatile storage for textual title and track information about the CDs in the changer. Also included is a communication device that communicates with a remote database to obtain the textual information. Instead of using a modem or an ISDN terminal adapter, the communication device uses a DTMF generator/detector to communicate with a front-end processor of the remote database using DTMF signals, or uses a conventional serial or parallel interface to communicate with an external device connected to the Internet that transmits queries formulated by the changer to the remote database and provides the response to the changer.

7 Claims, 4 Drawing Sheets

